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SOURCE Ugol', No 11, 1950.PK-2M COMBINE SPEEDS DRIFT CUTTING IN USSR COAL MINES

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The mechanization of cutting horizontal development drifts is extremely important since the speed with which it is accomplished influences the development of the operational front and consequently the coal output. The PK-2M combine, designed by Giprouglemash, is the most suitable for this work of the various machines which are at present in different stages of development. This machine is designed to cut horizontal development drifts with trapezoidal cross section in coal seams of more than average thickness, both those lacking and containing rocky interstratification and also those including pyrites.

The PK-2M started to operate in June 1950 in Mine No 33 of the Krasnoarmeyskugol' Trust of the Moskvougol' Combine. The seam being worked here is 4.5 meters thick. The roof consists of 0.3-0.5 meters of sand and thick clay of average firmness, and the floor consists of sand. The coal is of average toughness with small pyrite intrusions. In June, west drift No 44-bis was cut by the combine. Coal went from the combine to the ST-6 scraper-conveyer, which was set up in drift No 44-bis, was carried to the north main haulage drift No 3, and there entered one-ton mine cars which were hauled to the mine shaft by small AK-2 electric locomotives.

During 23 days of June, 218 linear meters of drift No 44-bis were cut by the PK-2M combine, and 2,200 tons of coal were mined. The average daily speed in cutting the drift amounted to 9.5 linear meters and the average shift speed amounted to 3.5 linear meters. On certain days a cutting speed of 17.5 linear meters was achieved.

In July the combine worked on drift No 46 and exceeded the figures established for drift No 44-bis, cutting 305.8 linear meters in 23 days. The daily average during this time was 13.3 linear meters and the average for a shift was 4.54 linear meters. On some days a speed of 18.2 linear meters was achieved and in some shifts as much as 8 linear meters. Labor productivity for July was 1.14 linear meter, or an 11.4-ton yield of coal.

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In August the combine was put into operation cutting west drift No 48. The work was carried out in three 8-hour shifts, with transport of rock and coal from the drift by the small AK-2 electric locomotive. During 27 days of August 311 linear meters were cut by the combine. Average daily cutting amounted to 11.5 linear meters, reaching 19.15 linear meters on some days.

On the most successful day, 7 August, 19.15 linear meters were cut. During the first shift, the combine worked 7 hours and cut 6 linear meters of drift. Only 1 hour was used for inspecting and greasing the combine, replacing bits, and laying roads. In the second shift 6.95 linear meters were cut in 7 hours and 15 minutes, and in the third shift, 6.2 linear meters in 7 hours.

The PK-2M combine greatly decreased the costs of drift cutting as against the same work done without a combine. The total costs per linear meter in June, using the combine, were 185 rubles, 38 kopeks; this included 100 rubles, 40 kopeks for wages; 71 rubles, 45 kopeks for materials; 9 rubles, 45 kopeks for amortization; 4 rubles, 8 kopeks for electric power.

The total costs per linear meter during July were 150 rubles, 51 kopeks; this included 65 rubles, 55 kopeks for wages; 71 rubles, 45 kopeks for materials; 9 rubles, 45 kopeks for amortization; 4 rubles, 8 kopeks for electric power. During 25 days of August the total costs per linear meter were 149 rubles, 38 kopeks; this included 64 rubles, 30 kopeks for wages; 71 rubles, 45 kopeks for materials; 9 rubles, 45 kopeks for amortization; 4 rubles, 8 kopeks for electric power. During the same period of August east drift No 43 was cut without using the combine and the total costs per linear meter were 217 rubles, 25 kopeks; including 94 rubles, 93 kopeks for wages; 122 rubles, 32 kopeks for materials.

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